

Lyme Disease

Frequently Asked Questions

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What is Lyme Disease?

Lyme disease is caused by the bacterium, *Borrelia burgdorferi* that normally lives in mice, squirrels and other small animals. It is transmitted among these animals -and to humans - through the bites of certain species of ticks. In the northeastern and north-central United States, the blacklegged tick (or deer tick, *Ixodes scapularis*) transmits Lyme disease. In the Pacific coastal United States, the disease is spread by the western blacklegged tick (*Ixodes pacificus*). About 1% of all deer ticks are infected with the bacteria. These ticks are called deer ticks because they usually feed and mate on deer. Ticks also feed on small rodents, birds, and other non-human animals. These animals may act as reservoirs for the Lyme disease bacteria (they carry the bacteria, but do not develop symptoms of the disease). If a tick feeds on an animal that carries the Lyme bacteria, the bacteria will enter the tick's body, making it able to pass the bacteria on to other animals and humans.



How is Lyme Disease Spread?

When a tick infected with Lyme disease bacterium bites a person, the bacteria can transfer to the person's blood. The tick must stay attached to the person's skin for 36-48 hours for infection to occur. Most people are infected through the bites of immature ticks called nymphs. Nymph ticks are very tiny (less than 2 mm) and very difficult to see.

Can Lyme disease spread from person-to-person?

There is no evidence that Lyme disease is transmitted from person-to-person. For example, a person cannot get infected from touching, kissing or having sex with a person who has Lyme disease.

Can Lyme disease spread from a pregnant woman to her baby?

Lyme disease acquired during pregnancy may lead to infection of the placenta and possible stillbirth, however, no negative effects on the fetus have been found when the mother receives appropriate antibiotic treatment. There are no reports of Lyme disease transmission from breast milk.

Can a person get Lyme disease from a blood transfusion?

Although no cases of Lyme disease have been linked to blood transfusion, scientists have found that the Lyme disease bacteria can live in blood that is stored for donation. As a precaution, the American Red Cross and the US Food and Drug Administration ask that persons with chronic illness due to Lyme disease do not donate blood. Lyme disease patients who have been treated with antibiotics and have recovered can donate blood beginning 12 months after the last dose of antibiotics was taken.



The deer tick (*Ixodes scapularis*) adult female, adult male, nymph, and larva on a centimeter scale. (Source: CDC)



Can my cat or dog spread Lyme disease to me or to other people?

Although dogs and cats can get Lyme disease, there is no evidence that they spread the disease directly to their owners. However, pets can bring infected ticks into your home or yard.

Can I get Lyme disease from food or water?

There is no credible evidence that Lyme disease can be transmitted through air, food, water, or from the bites of mosquitoes, flies, fleas, or lice.

Where are deer ticks found?

Deer ticks are found in wooded areas, high grasses, marshes, gardens, and beach areas. **Risk of exposure is greatest** in the woods and in the edge area between lawns and woods. Ticks can also be carried by animals into lawns and gardens and into houses by pets.

Who is most at risk for being infected with Lyme disease?

Campers, hikers, outdoor workers, and others may be exposed to infected ticks in wooded, brushy, and grassy places. People living in houses built in heavily wooded areas where infected ticks are common may also be at a higher risk for exposure.

What seasons of the year do the ticks bite the most?

Most people are infected through the bites of immature ticks called nymphs. These ticks feed during the spring and summer months (between May and September). Tick activity increases greatly in the spring (starting in April or May) when eggs first hatch. Ticks are most active and often feed in late June or early July, and slowly become less active during the autumn months. Ticks are least active and least likely to feed during January and February.

This means that, starting in the spring, you need to take precautions against tick bites, and should continue these precautions through the fall. However, while you are unlikely to receive a tick bite during the winter, you should not rule out tick-borne disease if you notice any symptoms of early Lyme or symptoms of any other tick-borne diseases and should still consult your physician about the possibility of these diseases.

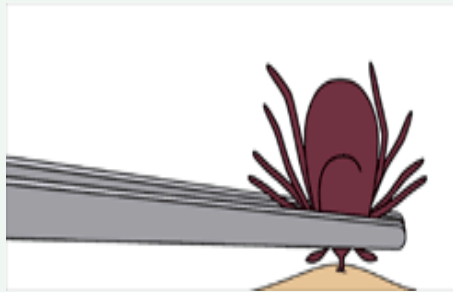
How do ticks get on me?

- ◆ Ticks are usually found from ground level to three feet above the ground. A tick uses carbon dioxide, scent, body heat, and other stimuli to find a host.
- ◆ Ticks crawl on to animals and persons as they brush against them.
- ◆ Ticks cannot jump or fly.
- ◆ Ticks feed on blood by inserting their mouth parts into the skin of a person or animal.

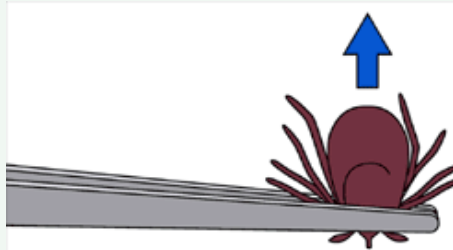
What do I do if I find a tick on me?

Remove the tick (see “how do I remove a tick if I find one on me”) and monitor yourself closely for signs and symptoms of tick-borne diseases for up to 30 days and specifically for the occurrence of a skin lesion at the site of the tick bite or a temperature $> 38^{\circ}\text{C}$ or 100.4°F . If you develop a skin lesion or other illness within 1 month of removing an attached tick you should promptly seek medical attention for an assessment.

How do I remove a tick if find one on me?



Remove a tick from your skin as soon as you notice it. Use fine-tipped tweezers to firmly grasp the tick very close to your skin. With a steady motion, pull the tick's body away from your skin. Then clean your skin with soap



Avoid crushing the tick's body. Do not be alarmed if the tick's mouthparts remain in the skin. Once the mouthparts are removed from the rest of the tick, it can no longer transmit the Lyme disease bacteria. If you accidentally crush the tick, clean your skin with soap and warm water or alcohol.

What are the Symptoms of Lyme disease?

Early Lyme disease is often marked by one or more of the following:

- A characteristic skin rash, called erythema migrans (red circular patch, often called a “bull’s eye” that appears at the site of the tick bite within 3 days to 1 month). About 70-80% of patients infected



Source: NY Medical College

by *B. burgdorferi* develop this characteristic skin lesion.

- Fatigue
- Chills and fever
- Headache
- Muscle and joint pain
- Swollen lymph nodes

Late Lyme disease - Some signs and symptoms of Lyme disease may not show until weeks, months, or years after a tick bite.

- Arthritis is most likely to appear as brief bouts of pain and swelling, usually in one or more large joints, especially the knees.
- Nervous system symptoms can include numbness, pain, nerve paralysis (often facial muscles, usually one side) and meningitis (fever, stiff neck, and severe headaches).
- Rarely, irregularities of the heart rhythm may occur.
- Problems with memory or cognition, fatigue, headache, and sleep disturbances sometimes persist after treatment.

Can Lyme disease be cured?

Lyme disease patients who are diagnosed early and receive proper antibiotic treatment usually recover rapidly and completely. A key component of early diagnosis is recognition of the characteristic Lyme disease rash called erythema migrans. This rash often takes a bull's-eye appearance.

What is the treatment for Lyme disease?

Most cases of Lyme disease can be cured with a few weeks of antibiotics taken by mouth. Antibiotics commonly used for oral treatment include doxycycline, amoxicillin, or cefuroxime axetil. Patients with certain neurological or cardiac forms of illness may require intravenous treatment with drugs such as ceftriaxone or penicillin.

How long do I need to take antibiotics for the treatment of Lyme disease?

Patients treated with antibiotics in the early stages of the infection usually take antibiotics for several weeks (14-21 days) and recover rapidly and completely. A few patients, particularly those who are first diagnosed with later stages of the disease, may have persistent or recurrent symptoms. These patients may benefit from a second 4-week course of therapy. Longer courses of antibiotic treatment have not been shown to be beneficial and have been linked to serious complications, including death.

How can I prevent Lyme disease?

There are several ways to prevent Lyme disease, including personal protection, tick control, post-exposure antibiotics, and early diagnosis and treatment. If a tick is attached to your skin for less than 24 hours, your chance of getting Lyme disease is extremely small. But just to be safe, monitor your health closely after a tick bite and be alert for any signs and symptoms of tick borne illness such as fever, nausea, severe headaches, muscle pain, rash, diarrhea.

Personal protection from tick bites



Avoid tick-infested areas

This is especially important in May, June and July. If you are in tick-infested areas, walk in the center of trails to avoid contact with overgrown grass, brush, and leaf litter at trails edges. Try not to stray off the path or sit on the ground.



Do daily tick checks

Always check for ticks after being outdoors, even in your own yard. Because ticks must usually be attached for at least a day before they can transmit the bacteria that cause Lyme disease, early removal can reduce the risk of infection. Check all body surfaces carefully, paying special attention to exposed hairy regions of the body where ticks often attach. Carefully inspect the heads and necks of children. Remove attached ticks with tweezers as described above. Avoid crushing the tick's body. DO NOT use petroleum jelly, a hot match, nail polish, or other products



Use insect repellent

Spray insect repellent containing a 20-30% concentration of DEET on clothes and on exposed skin; use 10% DEET for children. Apply DEET sparingly, according to product label instructions, only to exposed skin, and not to a child's face, hands, or skin that is irritated or abraded. After you return indoors, remove the DEET by washing the areas with soap and water. Permethrin is another type of repellent. It can be purchased at outdoor equipment stores that carry camping or hunting gear. Permethrin kills ticks on contact! One application to pants, socks, and shoes typically stays effective through several washings. Permethrin should not be applied directly to skin. You can also treat clothes (especially, pants, socks, and shoes) with permethrin, which kills ticks on contact. Permethrin can also be used on tents and some camping gear. **Do not use permethrin directly on skin.** Always follow the products directions when applying any repellents.



Wear protective

clothing

Long pants and long sleeves help keep ticks off your skin. Light-colored clothing will help you spot ticks more easily. You can even tuck pant legs into socks or boots and shirt into pants to keep ticks on the outside of clothing. Tape the area where pants and socks meet so that ticks cannot crawl under clothing. Ticks can get a ride indoors on your clothes. After being outdoors, wash and dry clothing at a high temperature to kill any ticks that may remain on clothing.



In high tick residential

areas there are some things you can do to decrease your chances of exposure:

- ✖ Clear brush and trees, remove leaf litter and wood piles.
- ✖ If you live in an area with deer fence in your yard to keep the deer out as much as possible.

Who do I call if I think I have Lyme disease?

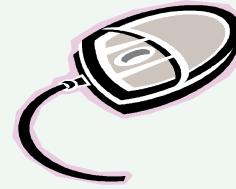
If you think you might have Lyme disease you need to call your Primary Medical Provider. Your Primary Medical Provider will do the appropriate testing if he/she feels that you may have Lyme disease.

Are there other diseases that are caused by ticks?

The ticks that transmit Lyme disease can occasionally transmit other tick-borne diseases as well, including babesiosis, and ehrlichiosis.

Initial symptoms of Ehrlichiosis generally include fever, headache, malaise, and muscle aches. Other signs and symptoms may include nausea, vomiting, diarrhea, cough, joint pains, confusion, and occasionally rash. For more information on ehrlichiosis go to <http://www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm>

Symptoms of babesiosis include fever, chills, sweating, myalgias, fatigue, and hemolytic anemia. Symptoms typically occur after an incubation period of 1 to 4 weeks, and can last several weeks.



For more internet information on Lyme disease:

Rhode Island Department of Health Lyme website at:
www.health.ri.gov/disease/communicable/lyme/index.php

Lyme disease Clinic at Rhode Island Hospital:
www.lifespan.org/services/infectious/lyme/clinic.htm

Centers for Disease Control (CDC) Lyme disease website
www.cdc.gov/ncidod/dvbid/lyme/index.htm

How prevalent is Lyme disease in Rhode Island?

In years past, Rhode Island had the second largest incidence of Lyme disease in the United States. For more information see the Rhode Island Department of Health website at <http://www.health.ri.gov/topics/lyme.php>



Who do I call if I have other questions concerning Lyme disease?

Contact the Rhode Island Department of Health at 222-2577